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ABSTRACT

Recent research suggesting a link between loneliness and social networks and a difference between males and females in both the quantity and quality of relationships support the view that loneliness can be predicted by gender from social network variables. In one study, two samples were used to explore gender differences. Sample 1, 97 males and 82 females, were undergraduates, most of whom had never married and lived at home. Sample 2, 42 males and 82 females, attended evening classes, were older than 25 years, and lived away from home (65 percent). All respondents completed the Social Network List, the Inventory of Socially Supportive Behaviors, and the Revised UCLA Loneliness Scale. In a second study, 76 male and 67 female undergradute students between the ages of 17 and 46 years completed a demographic information sheet, the Revised UCLA Loneliness Scale, the new social network density measures, and the Millers Topics Inventory. The results showed that social network characteristics, especially density, were consistently better predictors of perceived loneliness for males than for females. Uniformly, males with more highly interconnected, cohesive sets of friends reported less loneliness, while density had little correlation with loneliness in females. These results suggest that males and females may employ different standards in evaluating loneliness, with males using group oriented criteria, and females focusing on dyadic relationships. More research is needed on reciprocity, mutual emotional expressiveness, and nurturance. Such qualities may prove to be better predictors of loneliness for females than for males. (Author/TW)

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Gender Differences in Predicting Loneliness from Social Network Variables

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Abstract

Two studies (total n=446) examined gender differences in predicting loneliness from social network variables. The results showed that social network characteristics, especially density, were consistently better predictors of perceived loneliness for males than females. Study 1 used the traditional measure of network density in which the number of relationships among network members was determined. Study 2 employed a newly developed index of density that assessed the extent of closeness of relationships between pairs of network members. Uniformly, males with more highly interconnected, cohesive sets of friends reported themselves to be less lonely, while density had little relation to loneliness in females. These results are discussed as possibly indicating that males and females employ different standards in evaluating whether or not they are lonely. It is suggested that males may use more group oriented criteria in evaluating loneliness, while females focus more on the qualities of dyadic relationships.

Gender Differences in Predicting Loneliness from Social Network Variables

Most definitions of loneliness emphasize perceived deficits in social relationships that provide opportunities for emotional intimacy and companionship. These definitions imply that the characteristics of the social networks of the lonely and the non-lonely may differ. There is some empirical evidence that links the characteristics of people's social networks to perceived loneliness. Russell, Peplau, and Cutrona (1980) discovered that loneliness correlated with college student's reports of the number of close friends. Although Jones (1981) did not find a significant difference in the amount of social contact between lonely and non-lonely subjects, he found evidence relating loneliness to the diversity of social contacts. The interactions of lonely subjects occurred with more different people. Cutrona (1982) identified a relation of loneliness to the number of contacts with friends among college students. More recently, Stokes (1985) found that loneliness could be predicted from the number of confidants in a respondent's social network and from the density or interconnectedness among members of the network. People with denser networks reported themselves to be less lonely.

There is also an ample amount of research indicating differences between males and females in both the quantity and quality of relationships. A consistent finding from a number of studies of children's play is that girls tend to interact more in small groups, particularly dyads, while boys tend to interact in larger groups (Laosa & Brophy, 1972; Waldrop & Halverson, 1973; Lever, 1974). Eder and Hallinan (1978) discovered that girls were more inclined to form exclusive dyadic relationships with best friends and were less likely to include a third person than were boys.

Booth (1972) found that white-collar husbands reported having more friends than did their wives; however, blue-collar husbands and wives did not differ in the amount of friends. In the same study Booth discovered that women tended to maintain more kin relations than did men. Caldwell and Peplau (1982) found that men reported having more friends than women in each of three categories of relationships (casual, good, intimate), although this difference was not significant. Men, however, reported "getting together" with a significantly greater number of friends in an average week than did women. In a review of the literature on sex related similarities and differences in the nature of relationships with best friends during adolescence, Richey and Richey (1980) concluded that males value friends who share their interests, while females value nurturant confidants above all else. Overall, female friendships tend to be more intimate and exclusive than of males.

Because the characteristics of the social networks of males and females differ, gender related differences may exist in the relation of social network characteristics to perceived loneliness. In fact Jones, Freeman, and Goswick (1981) found gender differences in some interpersonal correlates of loneliness. The present studies were designed to investigate the relation of the characteristics of the social networks of males and females to loneliness.

Study 1

Method

Subjects. Two samples were used to explore gender differences. Sample 1 comprised 97 male and 82 female undergraduates, most of whom were freshman (58%) or sophomores (23%) who had never married (92%) and who lived at home with their families of origin. This sample provided data for Stokes (1985), although gender differences were not examined in that article.

Sample 2 was obtained in hopes that it would be more representative of the general population than the college students in Sample 1. Eighty percent of the Sample 2 respondents attended evening classes at various community colleges; 20% were students in introductory psychology classes who were older than 25 years. This sample had a mean age of 29 and consisted of 82 females and 42 males. About half were single, 33% were married, and 14% were divorced. Forty-three percent lived with a spouse or lover, 5% with a roommate, 35% with their family of origin, and 17% lived alone.

Instruments. Respondents in both samples completed three instruments:

1) The Social Network List, a measure modeled after Hirsch (1980), provides the following variables that reflect a subject's social network:
   a) Size -- number of people listed
   b) Confidants -- number of people the respondent feels close to; that is, the number he or she could confide in or turn to for help in an emergency.
   c) Per cent relatives -- per cent of network members who are relatives.
   d) Density -- proportion of the total possible number of relationships which actually exist among members of the respondent's network, excluding the respondent. Thus, the density of a network reflects the degree of which network members have relationships with one another.
2) The Inventory of Socially Supportive Behaviors (ISBB; Barrera, Sandler, & Ramsay, 1981) asks respondents to report the frequency with which they receive 40 specific supportive actions on a scale from 1 (not at all) to 5 (about every day). Respondents in Sample 2 completed a shorter, 18-item version of this scale, with items selected to

reflect the three components of social support tapped by the ISSB (Stokes & Wilson, 1984).

3) The Revised UCLA Loneliness Scale (Russell et al., 1980) consists of 20 statements like "I lack companionship" and "It is difficult for me to make friends." Respondents indicate how often each statement is true for them on a four-point scale from never to often.

Results

Table 1 presents the means for the variables used in this study separately for males and females. For Sample 1 there was only one statistically significant difference attributable to gender. Females had a larger percentage of relatives. For Sample 2 females reported larger networks with more confidants and a larger percentage of relatives. They also reported receiving more supportive behaviors and were less lonely than the males. These data suggest that the females in Sample 2 were somehow better off than the males in terms of their social networks, support received, and feelings of loneliness.

Table 2 contains the correlations of the social network variables and loneliness for the two samples separately for males and females. Two patterns are apparent in these data: 1) where significant relations exists, they are consistently higher for the males than for the females, and 2) the correlations are generally higher for Sample 2 than for Sample 1. The bottom row of Table 2 indicates that the network variables as a group account for almost twice as much variance in loneliness scores for males as for females.

In examining the relation of density to loneliness, it is desirable to control for the effects of percent relatives and size, both of which are confounded with density. Obviously relatives are more likely than nonrelatives to have relationships with one another, so networks with a large percentage of

relatives tend to be dense. The confounding of size and density is more subtle. As networks increase in size, the number of possible interrelationships among network members increases geometrically. A four person network requires only three relationships among network members to have a density of a .5 while a 16-person network must include 60 relationships among members to have a density of .5. Thus a negative relation between size and density is virtually assured.

To examine the relation of density to loneliness with the effects of percent relatives and size removed, hierarchical regression analysis was used. For Sample 1, after percent relatives and size were in the prediction equation, the addition of density increased the variance in loneliness accounted for by 11.4% for males ($p < .001$) and 4.8% for females ($p < .05$). The corresponding increases for Sample 2 were 16% for males ($p < .01$) and .03% ($p > .05$) for females. Thus, the relation of density and loneliness is much stronger for males than females, especially for the older sample.

Study 2

The results of Study 1 revealed interesting gender differences with respect to the relation of social network characteristics to perceived loneliness. The primary intent of this study was to replicate these results with a particular focus on the differential relation for males and females of network density and loneliness. In order to do this we developed a more refined measure of network density. The previous density measure was modified in three ways. First, in order to control for the effect of percent relatives and size on density, the social network list was limited to specifically seven people who were not part of the respondent's family. Second, to avoid the potential confound of the effects of involvement in a romantic relationship on the nature of the network lists, respondents were asked to focus solely on their same-sex relationships. Finally, respondent's rated the extent of closeness of the relationship between each pair of network members. In addition, we added a measure of self-disclosure in order to provide an index of the quality of dyadic relationships between respondent and friends.

Method

Subjects. Subjects were 76 male and 67 female undergraduate students. Ninety-two percent were single, 6% married, and 2% divorced. Eighty-one percent of respondents lived with their family of origin, 8% with a roomate with whom they were not romantically involved, 7% with a spouse or romantic partner, and 4% lived alone. The median age of respondents was 19 with an age range of 17-46 years.

Procedure. Respondents met with researchers in groups of 15-20 and completed a demographic information sheet, the revised UCLA Loneliness Scale, the new social network density measures, and the Millers Topics Inventory (Miller, Berg, & Archer, 1983), a measure of self-disclosure. The researchers led each group through the mechanics of completing the new density measure. Respondents were asked to think of exactly seven same-sex friends who were important to them and with whom they did things and discussed personal concerns. They listed the initials of these friends and then rated how close they felt to each one on a five point Likert scale ranging from "an acquaintance" to "a very close friend." The number of "5" ratings listed yielded a measure of the number of respondent's confidants. Respondents next rated the relationship of each pair of friends listed using a four-point Likert scale: 1) "don't know each other," 2) "acquaintances," 3) "friends," 4) "close friends." Network density was computed by averaging the ratings of all possible pairs of dyadic relationships among the seven people listed.

Results

Table 3 presents the means for the variables used in this study separately for males and females. Females reported themselves to be significantly less lonely and to self-disclose more to their friends than did males. Males reported their network of friends to be slightly more dense than females, while no difference was found in the number of confidants reported.

The correlations among the variables are presented in Table 4. Self-disclosure was significantly related to loneliness for both males and females. Network density was significantly related to loneliness for males but not for females. This result replicates the pattern of correlation found for both samples in Study One.

A multiple regression analysis was conducted to test a model predicting loneliness from the two network variables (confidants and density) separately for males and females. For males, this model accounted for 17% of the loneliness variance $F(2,73) = 7.33$, $p < .01$, while for females it accounted for only 9% of the variance in loneliness $F(2,64) = 3.09$, $p < .05$. This result also replicates the finding in Study 1 that network characteristics are better predictors of loneliness for males than for females.

Discussion

The results from these two studies indicate that social network characteristics, especially density, are better predictors of perceived loneliness for males than for females. The consistency of this finding across three independent data sets attests to its reliability. The differential relation of density to loneliness is particularly interesting given that males and females had equivalent levels of density in two of the three samples. Yet, uniformly, males with more highly interconnected sets of friends reported themselves to be less lonely, while network density had little relation to the perceived loneliness of females.

The literature on gender differences in the formation and development of friendships offers a rationale for understanding this finding. Both Douvan and Adelson (1966) and Coleman (1974) propose that males and females differ in the nature of their solutions to the identity crisis of adolescence. Male's sense of self seems to develop through an alliance with a "gang" or group of other males, where solidarity is highly valued. Females, on the other hand, develop their identity through mutually interactive relationships with a single same-sex friend, where close, intimate exchanges are valued. Eder & Hallinan (1978) have suggested that these types of early social interactions may lead in turn

to the development of particular skills, which increase the tendencies of males to interact in groups and of females to focus on intimate dyadic relationships.

Tiger (1969) used mainly antecodotal evidence to propose that a unique and intense form of comraderie and gregariousness develops among men but not among women. Bell (1981) also reported that women overwhelmingly form dyadic relationships, while men tend to include three or more people.

Therefore, there appears to be evidence supporting the notion the males tend to be more group oriented in their friendships than females. Females, on the other hand, have a stronger interest in developing close, dyadic social ties. As a result, it is possible that males and females use different standards for evaluating satisfaction with their current relationships. Buunk (1983) reviewed the literature on sex differences in friendships and concluded that males and females value different qualities in their relationships. Males tend to value instrumental qualities, similarity in attitudes, and shared activities and interests. Females place much greater emphasis on emotional sharing and intimacy. Dense networks seem to provide a degree of social integration that the more group-oriented male may use to evaluate whether or not he is lonely. Females may focus more on existence of close, intimate one-to-one relationships when evaluating loneliness

It is possible that indices more sensitive to intimacy in dyadic relationships may relate to loneliness more strongly for females than for males. One such variable is self-disclosure. Altman & Taylor (1973) in their extensive theoretical work on intimacy in relationships propose that self-disclosure is a primary determinant of intimacy. Stokes (in press) reviewed the literature on the relation of self-disclosure to loneliness and discovered that when friends are considered as targets of self-disclosure the relation is

stronger for females than for males. Future research needs to examine other indices of dyadic relationships such as reciprocity, mutual emotional expressiveness, and nurturance. Such qualities may prove to be better predictors of loneliness for females than for males.

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Table 1

Differences in Means by Gender of

Network Variables and Loneliness

	Sample 1			Sample 2		
	Males (N=97)	Females (N=82)	t	Males (N=49)	Females (N=81)	t
Size	11.15	10.54	1.22	10.67	13.04	-3.04**
Confide	7.62	7.16	1.08	4.71	6.81	-2.83**
Density	.29	.28	.43	.38	.38	.02
Percent Relatives	.35	.42	-2.28*	.29	.41	-3.35**
ISSB	99.41	103.14	1.23	44.08	53.30	-4.27**
Loneliness	42.47	40.31	-1.13	43.66	38.28	2.42*

* $p <$ .05 ** $p <$ .01

Note. -- ISSB scores for Sample Two were based on an 18-item short-form of the ISSB.

Table 2

Correlations of Network Variables and Loneliness

by Gender

	Sample 1		Sample 2	
	Males (N=97)	Females (N=82)	Males (N=49)	Females (N=81)
Size	-.21*	-.01	-.37**	-.27*
Confide	-.25*	-.16	-.50**	-.25*
Density	-.37**	-.20	-.20	.08
Percent Relatives	-.01	-.03	.09	.20
ISSB	-.28**	-.15	-.64**	-.46**
%Variance Accounted for by all 5 network variables	19.6**	10.6	56.6**	32.1**

* $p < .05$ ** $p < .01$

Table 3

Differences in Variable Means by Gender

	Males (N=76)	Females (N=67)	t
Density	2.31	2.11	2.02*
Self-Disclosure	13.20	15.50	-3.43**
Loneliness	36.00	33.00	2.16*
Confidants	2.09	2.29	-.89

* $p < .05$ ** $p < .001$

Table 4

Correlations Among Variables

	Density	Confidants	Self-Disc	Lonely
Density	—	.13	.05	-.19
Confidants	.36**	—	.25*	-.25**
Self-Disclosure	.15	.33**	—	-.42**
Lonely	-.35**	-.32**	-.35**	—

* $p < .05$ ** $p < .01$

Note. -- Correlations for males are below the diagonal; correlations for females are above the diagonal.